IKANOCRACY: GOVERNMENT BY THE COMPETENT

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Abstract. A proposal for a new form of government, *Ikanocracy* where all decision making would be through a dynamic form of weighted direct democracy.

As I write this, and probably as you read this, there is discontent and anger being expressed by public about the failings of our political system: undue influence of special interests, lack of long-term planning, inability and/or unwillingness of elected officials to make the necessary (but possibly unpopular) decisions, voter apathy, and so on. In the media are multitudes of political commentators, often former office holders, bemoaning the circumstances that gave rise to the latest scandal, and occasionally suggesting patches and polishes to right our political ship. Perhaps there is a better way. Sometimes it is time to recognize that no amount of patching can keep the boat afloat. Maybe it is time to build a better boat.

Begin by asking yourself *What is the role of government?* I would say that any government system has to be able to: (1) make decisions for society, (2) develop and maintain laws that encode those decisions, and (3) control and manage the apparatus of state which implements the decisions and enforces the laws. Ideally, a government system should be designed to be as simple as possible, while still being effective in carrying out these functions in an increasing complex society. It should be as widely distributed as possible to ensure active participation and discourage the accumulation of power in a few hands. It should be dynamic as possible, able to adapt over time to be more effective without adding much complexity.

I would agree with Winston Churchill that *Democracy is the worst form of government except all those other forms that have been tried.* I am going to propose a new system of government that hasn't yet been tried and that I believe has a number of advantages over the current systems (including Democracy). I call this system Ikanocracy, which roughly translated from Greek, means *government by the competent.*

1. Decision Making

One of the key functions of government is to make decisions for society. George Bush once said *I'm the decider, and I decide what is best.* But who is best equipped to make the decisions that direct a society? Is it one man? (Hopefully selected through some democratic process.) Is it the rich (a plutocracy)? The pious (a theocracy)? The property owners (a timocracy)? All of these, and many others have been tried. When power has been placed in the hands of a few, invariably the decisions of those few come to reflect the needs and wants of the few, not the whole

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of society. It also makes it easier for pressure to be exerted to sway the decision of the few towards special interests.

Why not put all decisions to a national referendum? We now have the technology to put in place a relatively inexpensive system to do just that. Beyond the technical aspects, there is also the concern that many people are ill-informed, have an unrealistic world-view, or just make poor decisions. As Winston Churchill also said, *The best argument against Democracy is a five minute conversation with the average voter.*

Many decisions require in depth thought and study, and possibly specialized knowledge. On any given topic, the majority of the populace may be uninformed or misinformed and so a majority decision may not be the best decision. What we want is that for any particular decision that must be made, the opinions of people who have best chance of making the best decision for society be given more weight. But how do you put such a system in place which is flexible, workable and robust.

We have now gotten down to the crux of the matter. What is the best predictor of a competent decision maker? Wealth? Education? Common sense? Just as *The best predictor of future behaviour is past behaviour*[1], I would say that the best predictor of a person's ability to make good decisions is that they made good decisions in the past. We should count the votes of those people who made good decisions for more than those who made bad decisions. This is the basic foundation for decision making in Ikanocracy.

In the next section I will lay out exactly how such a system of government could be implemented.

1.1. **Decision Making in Ikanocracy.** When a person enters a society, either by immigrating or by reaching the age of majority, (let's say at age sixteen) they receive one (1) voting share. On any proposition brought forth, a citizen may cast their voting shares as YES (for the proposition) or NO (against the proposition) or they may abstain. If more voting shares are on the YES side than the NO side, the proposition passes and is enacted for the society. The voting record of each citizen is recorded and kept as a guide for future reallocation of voting shares.

Each proposition enacted would come with *review time* attached (the default review time could be ten years). The review time would reflect the earliest time at which society could look back and decide whether the decision made was good for society or not. Then, when the review time arrives (and every ten years after that), society looks back the decision it has made on the original proposition and considers the proposition that the decision that was made was the correct one for the society (again through a vote using the voting share method described above). I call this type of proposition a *hindsight proposition.*

Once the society's hindsight decision on the correctness of the decision on the initial proposition has been decided, those who voted on the correct side of the original proposition see their voting shares increase, those who abstained have no change and those who were on the wrong side of the original proposition see their voting shares decrease. The amount of increase or decrease is related to two main factors: (1) the level of confidence society has in its hindsight decision. The higher the confidence, the greater the increase in voting shares for those who were correct in the original decision, and the greater the decrease in voting shares for those who

[1]Aphorism in the Social Sciences

were incorrect on the original decision; and (2) the strength of the consensus of the original decision. In general, being correct is rewarded more strongly (with a greater increase in voting shares) if the number of people who were on the correct side of an issue is smaller.

This is really all the non-mathematically inclined person needs to know about how Ikanocracy will work, as all the counting of votes and redistribution of voting shares takes place behind the scenes.

The mathematical details of how the redistribution of voting shares would work is as follows.

On any vote we need to keep a record of every person's vote, but there are four key numbers related to each vote:

(1) Y_P is the number of *voting shares* voting YES on proposition P;
(2) y_P is the number of *persons* voting YES on proposition P;
(3) N_P is the number of *voting shares* voting NO on proposition P;
(4) n_P is the number of *persons* voting NO on proposition P.

If $Y_{original} > N_{original}$ then the original proposition passes and is enacted, otherwise it is rejected.

At the specified review time, a review vote is held. If $Y_{hindsight} > N_{hindsight}$ society's hindsight decision is that the original decision was correct and those who voted correctly on the original proposition (i.e. voted YES) are rewarded with an increase in vote share and those who incorrectly (i.e. voted NO) are penalized by a decrease in vote share. Similarly, if $Y_{hindsight} < N_{hindsight}$ society's hindsight decision is that the original decision was incorrect and those who voted correctly on the original proposition (i.e. in this case voted NO) are rewarded and those who incorrectly (i.e. in this case voted YES) are penalized.

The rewards and penalties are based on a *confidence factor*

$$c = \frac{1}{4}\left|\frac{Y_{hindsight} - N_{hindsight}}{Y_{hindsight} + N_{hindsight}}\right|.$$

So $0 \leq c \leq \frac{1}{4}$, and is a measure of the confidence of society in the hindsight vote. If $Y_{hindsight} = N_{hindsight}$ then the yes and no sides have equal numbers of voting shares and $c = 0$; if all votes that are cast are for one side (either all YES or all NO) then $c = \frac{1}{4}$. It seems reasonable that the higher the confidence in a hindsight vote, the higher the reward should be for those who made the right decision in the original vote and the higher the penalty for those who made the wrong decision. In all cases persons on the incorrect side of the original proposition will see their voting shares decrease by $100c\%$. So in the extreme case where all non-abstainers agree on the hindsight vote, the confidence factor would be $c = 0.25$ and those on the incorrect side of the original proposition would lose 25%, and in a more typical scenario, where the non-abstainers split 60% to 40%, the confidence factor would be $c = 0.05$, so those on the incorrect side of the original proposition would lose 5%.

(The factor of $\frac{1}{4}$ is a parameter which I just chose to be a reasonable value. It encodes the absolute maximum percentage of vote share that could be lost by making an incorrect decision.)

In order to control voting share inflation, so that persons entering the Ikanocracy system have their one voting share worth the same, regardless of when they entered

the system, we always normalize so that the product, over all persons in the society, of their voting shares is equal to 1.

So we just had a number of people have their voting shares reduced by a factor of $(1-c)$. (Either $n_{original}$ people if an original decision YES decision is deemed to be correct, or an original NO decision is deemed to be incorrect, or $y_{original}$ people if an original YES decision is deemed to be incorrect, or an original NO decision is deemed to be correct.) We want the persons who were correct in their original vote to have their voting shares increased by some factor, and to keep the product of all voting shares equal to one, they must have their voting shares increase by $(1-c)^{-\frac{n_{original}}{y_{original}}}$ in the case where a YES decision on the original proposition is deemed to be correct (or a NO decision on the original proposition was deemed to be incorrect) and by $(1-c)^{-\frac{y_{original}}{n_{original}}}$, in the case where a NO decision on the original proposition is deemed to be correct (or a YES decision on the original proposition was deemed to be incorrect).

The persons who abstained on the original proposition see no change in their vote share.

Of course, all these calculations are made in the background, but the key idea that persons supporting decisions made that in hindsight are deemed to be good are rewarded and persons supporting decisions made that in hindsight are deemed to be bad are penalized. The stronger the confidence in the hindsight decision, the greater the reward or penalty.

The last thing to mention here is that every decision in Ikanocracy is up to review in a hindsight vote, even previous hindsight votes. If, in a second hindsight, vote the decision of society on the correctness of the original decision on a proposition is reversed then all rewards and penalties for that original decision are undone, and recomputed for the alternative decision. Even if not reversed, if the confidence factor changes, then the voting shares are recalculated based on the new confidence factor.

In addition, each later hindsight vote is considered to be not only a vote on the correctness of the original proposition, but on the correctness of each earlier hindsight vote as well, and so the voting share redistribution is carried out according to the above rules for each of these votes as well.

I would propose hindsight votes be held until society's hindsight decision on the correctness of the original decision has stabilized. For example, hindsight votes could be held until three hindsight votes have the same decision and the confidence factors that are all within a certain fixed amount of each other (e.g. all within .01 of each other).

1.2. **Example: Invasion?** Suppose the question is asked as to whether to invade a rogue state which is suspected of having Weapons of Mass Destruction (WMDs). The vote splits as 40% of voting shares abstain, 40% of voting shares voted YES, and 20% of voting shares voted NO. Of the persons who voted, 70% voted YES and 30% voted NO. So $Y_{original} = 40$, $N_{original} = 20$, $y_{original} = 70$ and $n_{original} = 30$ (I know the definitions of these quantities was in term of numbers, not percentages, but it doesn't matter as the formulas work out the same either way.)

Ten years later, thousands of soldiers have died, no WMDs are found, society is saddled with a huge war debt and another country is just starting the long rebuild of its society. A hindsight vote is held and 40% of voting shares abstain, 50%

of voting shares vote that the original decision to invade was wrong, and 10% of voting shares vote that the original decision was correct. So $Y_{hindsight} = 10$ and $N_{hindsight} = 50$. (Let us also suppose that $y_{hindsight} = 20$ and $n_{hindsight} = 80$.)

The value of c in this case is $c = \frac{1}{4}\left|\frac{50-10}{50+10}\right| = \frac{1}{6} = .167$

All those who voted for war have their voting shares decreased by a factor of $(1-c) = \frac{5}{6}$, losing roughly 16.7%, while all those who voted against war would have their voting shares increased by a factor of $\left(\frac{5}{6}\right)^{-\frac{70}{30}} = 1.53$ or roughly 53%.

Every decision made is subject to revisiting every ten years, so suppose that sometime during the next ten years, a secret evil lair is discovered containing WMDs in this country and it is realized that the invasion saved the world and the decision is reversed with 50% of the voting shares voting that the original decision was correct, 20% voting the original decision was wrong and 30% abstaining. The voting shares would then again be redistributed. The persons who originally voted for invasion would gain back their 16.7% while those who voted against invasion would lose their 53% increase.

Next, a new confidence number is computed based on the new hindsight vote: $c_{new} = \frac{1}{4}\left|\frac{50-20}{50+20}\right| = 0.107$. Now the persons who originally voted against invasion would lose a factor of $(1-c_{new}) = 0.893$ (or 10.7% or their voting share), while the people who voted for invasion would gain by a factor of $(0.893)^{-\frac{30}{70}} = 1.0497\%$ or roughly 5% of their voting share.

Also, the 50% of the voting shares who voted at the 10 year review that the original decision was wrong would lose voting share by an additional factor of $(1-c_{new}) = 0.893$ or 10.7%, while those who said the original decision was correct would gain voting share by a factor of $(0.893)^{-\frac{80}{20}} = 1.57$ or roughly 57%.

The key component is that every vote is subject to the benefit of a "hindsight vote" and so eventually society should get the decision correct and those who made good decisions would be rewarded. Of course there is still some degree of "luck" or uncertainty but in the long run, good deciders see their vote share increase and bad deciders see their vote share decrease.

1.3. **Some Aspects Decision Making in Ikanocracy.** Ikanocracy is designed to have the three basic properties that I mentioned earlier:

- **It is Simple:** Needless complexity leads to confusion and inefficiency. Our current system, having evolved to more complexity to address a world that is becoming more complex, has become unwieldy. Ikanocracy involves a simple voting process which is straightforward and has within it a number of checks and balances, without resorting to appeals to external authorities.
- **It is Distributed:** In Ikanocracy, all decisions are made by a large number of people and so the influence of lobbyists and others who wish to subvert the best interests of society for their own best interests are greatly diminished.
- **It is Dynamic:** In Ikanocracy, over time the opinions of those who have show good decision making capability will count for more. The system has built into it the ability to adapt and improve.

Some emergent properties of Ikanocracy.

- **The Invisible Hand guides society:** People tend to act in their own self-interest. This is bad in representative Democracy as representatives'

best interests may not agree with the best interests of society as a whole. In Ikanocracy, acting in your own self-interest (i.e. maximizing your voting share) is also in the best interest of society, since you do this by making good decisions.

- **Individualism is encouraged, but for the benefit of society:** Individualism is often seen as being opposed to the interests of society, but in Ikanocracy showing individualism, and being right, is good for society and strongly rewarded. Being wrong always causes some decrease in voting share, while being right in conjunction with a large majority only causes a minor increase in voting share. However, going against the herd and being right in conjunction with a small minority causes a large increase in voting share.
- **Voter engagement is maintained while signal-to-noise ratio increased:** It is to be expected that a large number of persons will abstain on any vote. Persons who have no strong opinion on an issue will value their vote shares too much to risk it in a 50-50 venture. Also, the persons who don't value their vote shares will soon see their shares deteriorate anyway. This will increase the "signal-to-noise ratio" and ensure that those with strong opinions on one side or the other of an issue are not overruled by a wishy-washy majority swayed by special interests or irrelevant factors. Also, a large number of abstainers is healthy in this system since when it comes time to evaluate a vote, those with a vested interest in preserving their vote shares by voting that their decision was correct regardless of the evidence can be overruled by the abstainers (plus the new voters who have entered the system in the past 10 years). There is another reason why vested interest voting is discouraged in this system. It is a bad idea to "double down " on a bad decision because eventually (maybe 10 years later when even more new voters have entered the pool), the bad decision will most likely be re-evaluated as wrong and the vested interest voters will take a "double hit" and lose a certain percentage of their vote share twice.
- **Voting influence remains constant across generations:** If no one ever left the society, the product of all voting shares would remain at 1, ensuring no vote inflation (or deflation). Vote inflation or deflation is bad since it could cause a demographic divide in influence, where the next generation entering the voting system would not have the same effective voting capability as the previous generation. Of course, within a given generation the voting shares will eventually become more concentrated in the hands of the good deciders. People will pass on, but one would expect that in the long term, the product of the voting shares of those who leave will be approximately one. It is possible that persons whose voting shares have decreased close to zero might be more likely to move to another society. If this happens and the product of voting shares diverges too far from 1, a redistribution (a universal revaluation of all shares by a fixed percentage) may be necessary, but this seems like a remote possibility.

2. Formulating and Prioritizing Propositions

Suppose we all agree that the decision making method of Ikanocracy is worth implementing. We still have to decide who gets to decide which Propositions get

put to a vote, and what will be the exact wording of those Propositions. Again these are key functions and cannot be left to a small group or the problems of undue influence of special interests, lack of long-term planning and inability and/or unwillingness to make the necessary (but possibly unpopular) decisions will arise here. We again want this process to be as simple as possible, but widely distributed and dynamic as well.

I have an idea for how this can be done as well. It uses ideas from existing citizen referendum rules in place in many jurisdictions, as well as ideas for creating content from Wiki creation and ideas for prioritizing propositions from websites such as reddit.com.

The basic plan is as follows: A number of subfora would be set up on different topics where people or organizations could work (using rules similar to wiki rules) to create a proposition which they would like society to consider enacting. Each proposition should have a clearly posed question, a specified time for the first review vote, clearly stated goals and outcomes, and clear language on any detailed law or policy that the proposition is proposing to be enacted. Once the group has gotten their proposition in what they believe is acceptable form, they would submit it to the main *Ikanocracy Forum*. Additionally private individuals or organizations could also submit propositions to the main *Ikanocracy Forum*, regardless of how they were created. A proposition on the main *Ikanocracy Forum* would be upvoted be a person who supports the proposition, by assigning some of their voting shares (earned in the decision making part of Ikanocracy) to that proposition. On this *Ikanocracy Forum*, the propositions currently submitted would be ranked according to the total number of voting shares they receive. Propositions that make it to the front page (i.e. are in the top ranked (let's say, in the top ten, to choose an reasonable number) in terms of voting shares received), and remain their for a fixed period of time (let's say one week, to choose a reasonable period of time) would then be put to a vote using the Ikanocracy decision making method.

On the *Ikanocracy Forum*, along with each proposition would be a place for comments, so persons could discuss why they support or do not support the proposition, and could make suggestions for improvements that might be made to garner their support. Persons could withdraw their support for a proposition at any given time and reallocate their outstanding voting shares to other propositions. Any proposition which remained on the Ikanocracy Forum for a certain amount of time (let's say one month) without reaching the front page, would be removed. The person, persons or organization submitting that proposition could rework it and try to resubmit it to the Ikanocracy Forum at a later date.

Since we are using voting shares to upvote propositions, in the long run persons who make better decisions will have more influence over which propositions eventually get considered by the whole of society.

Of course, all of these rules for constructing an Ikanocratic system for setting the agenda and formulating the propositions could be modified by a proposition which passes through the Ikanocracy decision making process, but we need a starting point, and I am just providing a reasonable foundation to build a system for prioritizing and formulating propositions.

3. Implementation

Our government has evolved to its current form due to many economic, demographic and sociological factors. Democracy has always relied on the ability to share information and debate issues prior to decision making. In early city-state democracy, the communication and sharing was face-to-face. When states grew larger, democracy waned until technology like the printing press once again allowed information and debate to happen among a large segment of the population. Most modern non-democratic societies try to keep strict control on the press to steer debate and control information. With the advent of the internet, and pervasive cell-phone usage, information control has become more difficult, and this has led to more emerging democracies.

The internet is a powerful information sharing tool, and soon everyone on the planet will have access. We should use this capability to redesign our government and improve decision making.

A number of secure servers would be set up to manage, record and maintain all transactions involving voting shares. A person would go to the government website to review all upcoming propositions, possibly participate in the subfora or engage in the prioritizing process on the Ikanocracy Forum, and when appropriate, vote on propositions using their voting shares. The voting share allocation would be automatically updated after each hindsight vote.

Appropriate security measures to ensure integrity of the vote would need to be enacted. This is not just a issue with Ikanocracy, but with many other voting systems involving computers. We must guard against the possibility to technological tampering.

One possibility is that all votes be public votes. I view Ikanocracy as a post-democratic system, adopted mainly in societies that have a democratic history and where fear of oppression or retribution for exercising ones voting franchise is unlikely. In a post-democratic society, technological tampering is a possibly greater danger than oppression or retribution. With a public vote, we would allow private individuals or organizations to have access to all voting data. These individuals or organizations could then monitor the votes and do their own calculations to ensure the voting was fair and that voting share allocation was being done correctly.

If public votes were not appropriate, another possibility is to have open source code for all the functions of Ikanocracy, and safeguards in place to ensure that this is the code that is actually running when votes are counted and voting shares redistributed.

How could we move from our current system to Ikanocracy? There are a number of important details to work out, but the broad strokes would be as follows. Suppose a large number of people get together and wish to institute a government system based on Ikanocracy. They could set up a parallel government, where propositions are proposed and voted on according to the principles of Ikanocracy. The current government would then be lobbied to implement these decisions. Whether implemented or not, they would be reviewed at the ten year intervals and voting shares redistributed. Persons who opt in to the parallel Ikanocracy system would be given one voting share. Over time, it would hopefully become clear that this system is making better decisions than the current political system and political pressure would lead to a phasing out of the old system and Ikanocracy being adopted as the official decision making body of government.

The persons who joined the parallel system would then have their voting shares legitimized as the official voting shares, while those who did not take part in the parallel system would receive one (1) voting share in the new official system.

4. In closing

I circulated an earlier draft of this article to a number of friends and colleagues, soliciting feedback and received a number of constructive suggestions. For example, it was my son Zachary who suggested that the amount of voting shares gained or lost due to any voting decision should depend on society's confidence in its hindsight decision, which led to the idea of a confidence factor.

I also received a number of questions like:

- Would there still be a President (or Prime Minister) if a country adopted Ikanocracy?
- Would there still be a constitution, and if so, shouldn't there be a higher vote threshold than just a voting share majority to change it?
- At what level of detail would the Ikanocractic process be involved in decision making? Would there still be a bureaucracy?

My answer to all these questions, and questions of this type which concern the details of implementing Ikanocracy, is that this is something that can be decided through the Ikanocratic process. Of course I have my own opinions on these issues, and I would think that a Prime Minister, Constitution and Bureaucracy would still be necessary, but that the highest authority would be always the people making decisions through the Ikanocratic process. I could envision an election of a Head of State where factors like the candidate's voting shares are considered rather than extraneous factors like how telegenic the candidate is. But these are just my opinions, I am willing to support any government structure put in place via decisions of Ikanocracy.

I was also asked in what sort of societies I could envision Ikanocracy being implemented. The obvious example is of a country, but any group of people which is relatively stable in its composition (so voting shares have time to accumulate with the good decision makers) could implement an Ikanocratic decision making process. It could be a state, a city, a corporation, a union or a social club, just to name a few possibilities.

I would appreciate hearing any feedback people might have. In particular, if you can think of any scenario where our current method of governance would work better than a mature Ikanocracy system, I would be interested in hearing about it. I am not claiming the above system is perfect, and it is not written in stone. If there are deficiencies, let's identify and address them. If you have read this far, you must have misgivings about our current governance structures. Rather that give in to cynicism or despair, let's try to build a better system.